

Appl. No. 10/812,819  
Amtd. Dated Feb. 17, 2005  
Reply to Office Action Mailed November 17, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A mold production scheduling system for scheduling mold parts to be produced, the mold production scheduling system comprising:

a basic data maintaining module for adding, modifying, inquiring of and deleting basic data, the basic data including machine resource data, mold data and mold part data; and

a simulation analysis module for dynamically analyzing supply and demand, and generating scheduling results according to basic data provided by the basic data maintaining module[[]], the simulation analysis module comprising:

a production scheduling sub-module for scheduling start times and finish times for mold parts to be produced;

a part order scheduling sub-module for generating mold part order scheduling charts; and

a Gunter analysis graph generating sub-module for transforming the mold part order scheduling charts into Gunter analysis graphs, which illustrate a distribution of each part order in corresponding machines.

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**Claim 2 (original):** The mold production scheduling system according to claim 1, wherein the basic data maintaining module comprises:

- a machine resource maintaining sub-module for maintaining basic data on available machine resources according to codes, names, quantities and service times of available machines;
- a resource setting maintaining sub-module for setting a status of any machine as occupied, and for setting a time period during which the machine will remain occupied;
- a mold data maintaining sub-module for adding, modifying and deleting mold data, and for generating mold parts bills; and
- a part order maintaining sub-module for adding, modifying and deleting part order data.

**Claim 3 (original):** The mold production scheduling system according to claim 2, wherein the machine resource maintaining sub-module is also for setting users and use times according to the codes, names, quantities and service times of available machines.

**Claim 4 (original):** The mold production scheduling system according to claim 2, wherein the basic data comprise a bill of material, a delivery date and a production order on each part of a mold, and man-hours of relevant workshop sections.

**Claim 5 (original):** The mold production scheduling system according to claim 2, wherein the part order data for each part comprise a serial number, a delivery date, one or more workshop sections, scheduled man-hours, and a production status of each relevant workshop section.

**Claim 6 (canceled)**

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**Claim 7 (currently amended):** The mold production scheduling system according to claim [[6]] 1, wherein the production scheduling sub-module is also for calculating loads of machines and determining key machines.

**Claim 8 (original):** A mold production scheduling method for scheduling mold parts to be produced, the method comprising the steps of:

generating a mold part bill according to a client's demand and a mold bill of material;

calculating a planned finish date of each mold part;

calculating a load of each of machines, and determining key machines;

determining key mold parts and key production orders;

scheduling key production orders for key machines;

determining whether any ordinary production order is ahead of any key production order;

if any ordinary production order is ahead of a key production order, scheduling the ordinary production order applying a pull rule;

if no ordinary production order is ahead of any production key order, scheduling each ordinary production order applying a push rule;

generating a production order scheduling result; and

describing the production order scheduling result by way of a Gunter analysis graph, in order to display occupation times of each mold part on corresponding machines.

**Claim 9 (original):** The mold production scheduling method according to claim 8, wherein the step of determining key machines comprises defining a machine with a large load as a key machine.

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**Claim 10 (original):** The mold production scheduling method according to claim 8, wherein the step of determining key production orders comprises defining production orders processed on key machines as key production orders.

**Claim 11 (original):** The mold production scheduling method according to claim 8, wherein the step of determining key mold parts comprises defining mold parts with key production orders as key mold parts.

**Claim 12 (original):** The mold production scheduling method according to claim 8, wherein the step of scheduling key production orders for key machines comprises applying a limited capacity project method, in which a quantity, capacity and efficiency of each kind of machine, and a capacity and work time of corresponding workers are all taken into account.

**Claim 13 (original):** The mold production scheduling method according to claim 8, wherein the step of scheduling the ordinary production order applying a pull rule comprises reversing any scheduling of the ordinary production orders ahead of the key production order.

**Claim 14 (original):** The mold production scheduling method according to claim 8, wherein the step of scheduling each ordinary production order applying a push rule comprises scheduling each ordinary production order behind the corresponding one or more key production orders.

**Claim 15 (currently amended):** A process of making a mold production scheduling, comprising the steps of:

- setting [[a]] resource supply basic data;
- inputting [[a]] basic mold data;
- analyzing supply and demand;

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generating a part order scheduling chart;  
displaying a gunter Gunter graph; and  
instructing production, including setting machine occupation and [[back]]  
returning to the step of analyzing supply and demand, and updating  
finished parts and production orders and [[back]] returning to the step of  
inputting basic mold data.